

Title (en)

A method of driving an hydraulic actuator by means of a pressure-controlled proportioning solenoid valve

Title (de)

Verfahren zum Betreiben einer hydraulischen Betätigungseinrichtung mittels eines Druck steuernden Magnetventils

Title (fr)

Procédé de commande d'actionneur hydraulique au moyen d'une électrovanne pour la régulation de pression

Publication

**EP 2065624 A1 20090603 (EN)**

Application

**EP 07425752 A 20071128**

Priority

EP 07425752 A 20071128

Abstract (en)

A method of driving a hydraulic actuator (13) provided with a pressure-controlled proportioning solenoid valve (21); the method includes the steps of: determining a first open-loop contribution (I<sub>p</sub>) according to a pressurized oil flow rate (Q<sub>FF</sub>) which crosses the proportioning solenoid valve (21) and according to the desired load pressure (P<sub>load</sub>) inside the actuation chamber (20); determining a second open-loop contribution (I<sub>QFF</sub>) according to the desired position (X<sub>SpoolRef</sub>) of the spool (29) of the proportioning solenoid valve (21); determining a third closed-loop contribution (I<sub>QCL</sub>) according to the difference ( $\mu X$ ) between a desired value (X<sub>REF</sub>) of the position of the mobile piston (22) and a real value (X) of the position of the mobile piston (22); and calculating a desired electric driving current value (I<sub>TOT</sub>) of the proportioning solenoid valve (21) by means of an algebraic sum of the three contributions (I<sub>P</sub>, I<sub>QFF</sub>, I<sub>QCL</sub>).

IPC 8 full level

**F16H 61/30** (2006.01)

CPC (source: EP US)

**F16H 61/30** (2013.01 - EP US); **F16H 2061/2823** (2013.01 - EP US)

Citation (search report)

- [A] EP 1270954 A2 20030102 - WABCO GMBH & CO OHG [DE]
- [A] EP 1055847 A2 20001129 - AISIN AI CO LTD [JP]
- [A] EP 1722133 A2 20061115 - EATON CORP [US]
- [A] EP 0802356 A2 19971022 - FIAT RICERCHÉ [IT]
- [A] GB 2379721 A 20030319 - LUK LAMELLEN & KUPPLUNGSBAU [DE]
- [A] EP 0933564 A2 19990804 - KONGSBERG TECHMATIC UK LTD [GB]

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

**EP 2065624 A1 20090603**; **EP 2065624 A8 20090930**; **EP 2065624 B1 20100303**; AT E459831 T1 20100315; BR PI0805335 A2 20090721; BR PI0805335 B1 20190618; CN 101482132 A 20090715; CN 101482132 B 20121024; DE 602007005152 D1 20100415; US 2009173220 A1 20090709; US 8191456 B2 20120605

DOCDB simple family (application)

**EP 07425752 A 20071128**; AT 07425752 T 20071128; BR PI0805335 A 20081128; CN 200810181930 A 20081128; DE 602007005152 T 20071128; US 29279208 A 20081126